```
============================================================
Sequence Listing was accepted.
If you need help call the Patent Electronic Business Center at (866)
217-9197 (toll free).
Reviewer: Durreshwar Anjum
Timestamp: [year=2009; month=1; day=2; hr=8; min=35; sec=49; ms=169; ]
============================================================
```

```
Validated By CRFValidator v 1.0.3
```

Application No: 10519821   Version No: 2.0

Input Set:

Output Set:


```
        Started:  2008-12-16 14:26:29.832
       Finished:  2008-12-16 14:26:30.272
        Elapsed:  0 hr(s) 0 min(s) 0 sec(s) 440 ms
 Total Warnings:  5
   Total Errors:  0
No. of SeqIDs Defined:  5
Actual SeqID Count:  5
```

Error code   Error Description

```
W   213       Artificial or Unknown found in <213>  in SEQ ID (1)

W   213       Artificial or Unknown found in <213>  in SEQ ID (2)

W   213       Artificial or Unknown found in <213>  in SEQ ID (3)

W   213       Artificial or Unknown found in <213>  in SEQ ID (4)

W   213       Artificial or Unknown found in <213>  in SEQ ID (5)
```

<110> Daniell, Henry

<120> Plastid Genetic Engineering Via Somatic Embryogenesis

<130> CHL-T107C2Z2

<140> 10519821
<141> 2005-09-28

<150> PCT/US2003/021157
<151> 2003-07-03

<160> 5

<170> PatentIn version 3.2

<210> 1
<211> 3204
<212> DNA
<213> Artificial Sequence

<220>
<223> aadA/BADH expression cassette

<400> 1

```
agcttgcggg cccccctcg aggtcgacgg tatcgatgag cctgattatc cctaagccca      60

atgtgagttt ttctagttgg atttgctccc ccgccgtcgt tcaatgagaa tggataagag     120

gctcgtggga ttgacgtgag ggggcaggga tggctatatt tctgggagcg aactccgggc     180

gaatatgaag cgcatggata caagttatgc cttggaatga aagacaattc cgaatccgct     240

ttgtctaccc gatacaagtg agttgtaggg aggcaaccat ggcagaagcg gtgatcgccg     300

aagtatcgac tcaactatca gaggtagttg gcgtcatcga gcgccatctc gaaccgacgt     360

tgctggccgt acatttgtac ggctccgcag tggatggcgg cctgaagcca cacagtgata     420

ttgatttgct ggttacggtg acggtgaccg taaggcttga tgaaacaacg cggcgagctt     480

tgatcaacga cctttttggaa acttcggctt cccctggaga gagcgagatt ctccgcgctg     540

tagaagtcac cattgttgtg cacgacgaca tcattccgtg gcgttatcca gctaagcgcg     600

aactgcaatt tggagaatgg cagcgcaatg acattcttgc aggtatcttc gagccagcca     660

cgatcgacat tgatctggct atcttgctgg caaaagcaag agaacatagc gttgccttgg     720

taggtccagc ggcggaggaa ctctttgatc cggttcctga acaggatcta tttgaggcgc     780

taaatgaaac cttaacgcta tggaactcgc cgcccgactg gctggcgat gagcgaaatg     840

tagtgcttac gttgttccgc atttggtaca gcgcagtaac cggcagaatc gcgccgaagg     900
```

```
atgtcgctgc cgactgggca atggagcgcc tgccggccca gtatcagccc gtcatacttg      960

aagctagaca ggcttatctt ggacaagaag aagatcgctt ggcctcgcgc gcagatcagt     1020

tggaagaatt tgttcactac gtgaaaggcg agatcaccaa ggtagtcggc aaataaaaag     1080

ccgaatctag agcgatcctg gcctagtcta taggaggttt tgaaaagaaa ggagcaataa     1140

tcattttctt gttctatcaa gagggtgcta ttgctccttt cttttttttct ttttatttat    1200

ttactagtat tttacttaca tagacttttt tgtttacatt atagaaaaag aaggagaggt     1260

tattttcttg catttattca tgattgagta ttctattttg attttgtatt tgtttgggct     1320

gcgcggggag accacaacgg tttccctcta gaaataattt tgtttaactt taagaaggag     1380

atataccatg gcgttcccaa ttcctgctcg tcagctattc atcgacggag agtggagaga     1440

acccattaaa aaaaatcgca tacccgtcat caatccgtcc actgaagaaa tcatcggtga     1500

tattccggca gccacggctg aagatgtgga ggttgcggtg gtggcagctc gaagagcctt     1560

taggaggaac aattggtcag caacatctgg ggctcatcgt gccacatact tgcgtgctat     1620

tgctgctaag ataacagaaa aaaagatca tttcgttaaa ctggaaacca ttgattctgg     1680

gaaacctttt gatgaagcag tgctggacat tgatgacgtt gcttcatgtt ttgaatattt     1740

tgccggacaa gcagaagctc ttgatggtaa acaaaaggct ccagtcaccc tgcctatgga     1800

aaggttcaaa agtcatgttc tcaggcagcc ccttggtgtt gttggattaa tatccccatg     1860

gaattaccca cttctaatgg ctacatggaa aattgctcca gcacttgctg ctgggtgtac     1920

agctgtactt aagccatccg agttggcatc tgtgacttgt ctagaattcg gtgaagtttg     1980

caacgaagtg ggacttcctc caggcgtgtt gaatatcttg acaggattag gtccagatgc     2040

tggtgcacca ttagtatcac accccgatgt tgacaagatt gcctttactg ggagtagtgc     2100

cactggaagc aaggttatgg cttctgctgc ccaattggtt aagcctgtta cattagaact     2160

tggggggtaaa agtcctattg tagtgtttga agatgttgat attgataaag ttgtggaatg     2220

gactattttt ggctgtttct ggacaaatgg tcaaatatgt agtgcaacgt ctagactgct     2280

tgtgcatgaa agtattgcag ctgagtttgt tgataagctt gtaaaatgga cgaaaaacat     2340

taaaatttct gacccatttg aagaaggatg ccggcttggc cctgttatta gtaaaggaca     2400

gtacgacaaa attatgaagt tcatatcaac agcaaagagt gagggggcaa ctattttgta     2460

tggaggttcc cgtcctgagc atttgaagaa aggttattac attgaaccca ccattgtaac     2520

tgatatctcc acatccatgc aaatatggaa agaggaagtt tttggccctg tcttgtgtgt     2580
```

taaaacattt agttccgaag atgaagccat tgcattggca aatgatacag agtacggttt   2640

agctgctgct gtgttttcta atgatcttga aagatgtgag aggataacga aggctctaga   2700

agttggagct gtttgggtta attgctcaca accatgcttt gttcaagctc cttggggagg   2760

catcaagcgt agtggttttg gacgtgaact tggagaatgg ggtatccaga attacttgaa   2820

tatcaagcag gtgactcaag atatttctga tgaaccatgg ggatggtaca gtctccttg   2880

aaagccgaat tccagcacac tggcggccgt tactagatcc atcacactgg cggcccgaac   2940

acggaattca atggaagcaa tgataaaaaa atacaaatag aaaaggaaag ggaggaaata   3000

caaaaaaata gaagagaaaa gtcatacaaa gttatataca aatgactacc cccctttttg   3060

tatttcctta atttatttcc ttaattgaat ttcgatggat acaagttatg ccttggaatg   3120

aatttcggtt gattaggact agtaagccga attctgcaga tatccatcac actggcggcc   3180

gctcgagcat gcatctagag ggcc   3204

<210>   2
<211>   3299
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   gfp/BADH expression cassette

<400>   2
cgggcccccc ctcgaggtcg acggtatcga tgagcctgat tatccctaag cccaatgtga   60

gtttttctag ttggatttgc tcccccgccg tcgttcaatg agaatggata agaggctcgt   120

gggattgacg tgaggggca gggatggcta tatttctggg agcgaactcc gggcgaatat   180

gaagcgcatg gatacaagtt atgccttgga atgaaagaca attccgaatc cgctttgtct   240

accgggagac cacaacggtt tccctctaga aataattttg tttaacttta agaaggagat   300

atacccatgt ccatgagtaa aggagaagaa cttttcactg gagttgtccc aattcttgtt   360

gaattagatg gtgatgttaa tgggcacaaa ttttctgtca gtggagaggg tgaaggtgat   420

gcaacatacg gaaaacttac ccttaaattt atttgcacta ctggaaaact acctgttcca   480

tggccaacac ttgtcactac tttctcttat ggtgttcaat gctttttcaag atacccagat   540

catatgaagc ggcacgactt cttcaagagc gccatgcctg agggatacgt gcaggagagg   600

accatctctt tcaaggacga cgggaactac aagacacgtg ctgaagtcaa gtttgaggga   660

gacaccctcg tcaacaggat cgagcttaag ggaatcgatt tcaaggagga cggaaacatc   720

ctcggccaca gttggaata caactacaac tcccacaacg tatacatcac ggcagacaaa   780

```
caaaagaatg gaatcaaagc taacttcaaa attagacaca acattgaaga tggaagcgtt     840

caactagcag accattatca acaaaatact ccaattggcg atggccctgt cctttttacca    900

gacaaccatt acctgtccac acaatctgcc ctttcgaaag atcccaacga aaagagagac     960

cacatggtcc ttcttgagtt tgtaacagct gctgggatta cacatggcat ggatgaacta    1020

tacaaataat ctagaaagcc gaattctgca gatcgaacac ggaattcaat ggaagcaatg    1080

ataaaaaaat acaaatagaa aaggaaaggg aggaaataca aaaaaataga agagaaaagt    1140

catacaaagt tatatacaaa tgactacccc ccttttttgta tttccttaat ttatttcctt   1200

aattgaattt cgatggatac aagttatgcc ttggaatgaa tttcggttga ttaggactag    1260

cgataagctt gatatcgaat tcggcttgat atcgtcgacg tagagaagtc cgtattttttc   1320

caatcaactt cattaaaaat ttgaatagat ctacatacac cttggttgac acgagtatat    1380

aagtcatgtt atactgttga ataaaaagcc ttccattttc tattttgatt tgtagaaaac    1440

tagtgtgctt gggagtccct gatgattaaa taaaccaaga ttttccatgg cgttcccaat    1500

tcctgctcgt cagctattca tcgacggaga gtggagagaa cccattaaaa aaaatcgata    1560

cccgtcatca atccgtccac tgaagaaatc atcggtgata ttccggcagc cacggctgaa    1620

gatgtggagg ttgcggtggt ggcagctcga agagccttta ggaggaacaa ttggtcagca    1680

acatctgggg ctcatcgtgc cacatacttg cgtgctattg ctgctaagat aacagaaaaa    1740

aaagatcatt tcgttaaact ggaaaccatt gattctggga aaccttttga tgaagcagtg    1800

ctggacattg atgacgttgc ttcatgtttt gaatattttg ccggacaagc agaagctctt    1860

gatggtaaac aaaaggctcc agtcaccctg cctatggaaa ggttcaaaag tcatgttctc    1920

aggcagcccc ttggtgttgt tggattaata tccccatgga attacccact tctaatggct    1980

acatggaaaa ttgctccagc acttgctgct gggtgtacag ctgtacttaa gccatccgag    2040

ttggcatctg tgacttgtct agaattcggt gaagtttgca cgaagtggg acttcctcca     2100

ggcgtgttga atatcttgac aggattaggt ccagatgctg gtgcaccatt agtatcacac    2160

cccgatgttg acaagattgc ctttactggg agtagtgcca ctggaagcaa ggttatggct    2220

tctgctgccc aattggttaa gcctgttaca ttagaacttg ggggtaaaag tcctattgta    2280

gtgtttgaag atgttgatat tgataaagtt gtggaatgga ctattttttgg ctgtttctgg    2340

acaaatggtc aaatatgtag tgcaacgtct agactgcttg tgcatgaaag tattgcagct    2400

gagtttgttg ataagcttgt aaaatggacg aaaaacatta aaatttctga cccatttgaa    2460
```

```
gaaggatgcc ggcttggccc tgttattagt aaaggacagt acgacaaaat tatgaagttc      2520

atatcaacag caaagagtga gggggcaact attttgtatg gaggttcccg tcctgagcat      2580

ttgaagaaag gttattacat tgaacccacc attgtaactg atatctccac atccatgcaa      2640

atatggaaag aggaagtttt tggccctgtc ttgtgtgtta aaacatttag ttccgaagat      2700

gaagccattg cattggcaaa tgatacagag tacggtttag ctgctgctgt gttttctaat      2760

gatcttgaaa gatgtgagag gataacgaag gctctagaag ttggagctgt ttgggttaat      2820

tgctcacaac catgctttgt tcaagctcct tggggaggca tcaagcgtag tggtttttgga     2880

cgtgaacttg gagaatgggg tatccagaat tacttgaata tcaagcaggt gactcaagat      2940

atttctgatg aaccatgggg atggtacaag tctccttgaa agccgaattc cagcacactg      3000

gcggccgtta ctagtggatc cactagtaac ggccgccagt gtgctggaat tcggctttct      3060

agagcgatcc tggcctagtc tataggaggt tttgaaaaga aaggagcaat aatcatttc       3120

ttgttctatc aagagggtgc tattgctcct ttctttttt ctttttattt atttactagt      3180

attttactta catagacttt tttgtttaca ttatagaaaa agaaggagag gttatttct       3240

tgcatttatt catgattgag tattctattt tgattttgta tttgtttggg ctgcgagct      3299


<210>   3
<211>   2569
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   aphA-6/nptII expression cassette

<400>   3
cgggcccccc ctcgaggtcg acggtatcga tgagcctgat tatccctaag cccaatgtga       60

gttttctag ttggatttgc tcccccgccg tcgttcaatg agaatggata agaggctcgt      120

gggattgacg tgaggggggca gggatggcta tatttctggg agcgaactcc gggcgaatat     180

gaagcgcatg gatacaagtt atgccttgga atgaaagaca attccgaatc cgctttgtct      240

acctgcagcc cgggagacca caacggtttc cctctagaaa taattttgtt taactttaag      300

aaggagatat accatggaat taccaaatat tattcaacaa tttatcggaa acagcgtttt      360

agagccaaat aaaattggtc agtcgccatc ggatgtttat tcttttaatc gaaataatga      420

aactttttt cttaagcgat ctagcacttt atatacagag accacataca gtgtctctcg       480

tgaagcgaaa atgttgagtt ggctctctga aaattaaag gtgcctgaac tcatcatgac       540

ttttcaggat gagcagtttg aattcatgat cactaaagcg atcaatgcaa aaccaatttc      600
```

```
agcgctttt ttaacagacc aagaattgct tgctatctat aaggaggcac tcaatctgtt      660

aaattcaatt gctattattg attgtccatt tatttcaaac attgatcatc ggttaaaaga      720

gtcaaaattt tttattgata accaactcct tgacgatata gatcaagatg attttgacac      780

tgaattatgg ggagaccata aaacttacct aagtctatgg aatgagttaa ccgagactcg      840

tgttgaagaa agattggttt tttctcatgg cgatatcacg gatagtaata ttttttataga     900

taaattcaat gaaatttatt ttttagatct tggtcgtgct gggttagcag atgaatttgt      960

agatatatcc tttgttgaac gttgcctaag agaggatgca tcggaggaaa ctgcgaaaat     1020

attttttaaag catttaaaaa atgatagacc tgacaaaagg aattatttt taaaacttga     1080

tgaattgaat tgattccaag cattatctaa aatactccta gagcggcccg aacacggaat     1140

tcaatggaag caatgataaa aaaatacaaa tagaaaagga aagggaggaa atacaaaaaa     1200

atagaagaga aaagtcatac aaagttatat acaaatgact acccccctttt ttgtatttcc     1260

ttaatttatt tccttaattg aatttcgatg gatacaagtt atgccttgga atgaatttcg     1320

gttgattagg actagatcgt cgacgtagag aagtccgtat ttttccaatc aacttcatta     1380

aaaatttgaa tagatctaca tacaccttgg ttgacacgag tatataagtc atgttatact     1440

gttgaataaa aagccttcca ttttctattt tgatttgtag aaaactagtg tgcttgggag     1500

tccctgatga ttaaataaac caagattttc atatgattga acaagatgga ttgcacgcag     1560

gttctccggc cgcttgggtg gagaggctat tcggctatga ctgggcacaa cagacaatcg     1620

gctgctctga tgccgccgtg ttccggctgt cagcgcaggg gcgcccggtt cttttttgtca     1680

agaccgacct gtccggtgcc ctgaatgaac tgcaggacga ggcagcgcgg ctatcgtggc     1740

tggccacgac gggcgttcct tgcgcagctg tgctcgacgt tgtcactgaa gcgggaaggg     1800

actggctgct attgggcgaa gtgccggggc aggatctcct gtcatctcac cttgctcctg     1860

ccgagaaagt atccatcatg gctgatgcaa tgcggcggct gcatacgctt gatccggcta     1920

cctgcccatt cgaccaccaa gcgaaacatc gcatcgagcg agcacgtact cggatggaag     1980

ccggtcttgt cgatcaggat gatctggacg aagagcatca ggggctcgcg ccagccgaac     2040

tgttcgccag gctcaaggcg cgcatgcccg acggcgatga tctcgtcgtg acccatggcg     2100

atgcctgctt gccgaatatc atggtggaaa atggccgctt ttctggattc atcgactgtg     2160

gccggctggg tgtggcggac cgctatcagg acatagcgtt ggctacccgt gatattgctg     2220

aagagcttgg cggcgaatgg gctgaccgct tcctcgtgct ttacggtatc gccgctcccg     2280
```

```
attcgcagcg catcgccttc tatcgccttc ttgacgagtt cttctgatct agagcgatcc     2340

tggcctagtc tataggaggt tttgaaaaga aaggagcaat aatcattttc ttgttctatc     2400

aagagggtgc tattgctcct ttcttttttt ctttttattt atttactagt attttactta     2460

catagacttt tttgtttaca ttatagaaaa agaaggagag gttattttct tgcatttatt     2520

catgattgag tattctattt tgattttgta tttgtttggg ctgcgagct               2569
```

<210>   4
<211>   23
<212>   DNA
<213>   Artificial

<220>
<223>   primer

<400>   4
```
gtgtcagtgt cggcccagca gag                                              23
```

<210>   5
<211>   22
<212>   DNA
<213>   Artificial

<220>
<223>   primer

<400>   5
```
aacagggggtc aaggtcggcc ag                                              22
```